## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Silver et al.	
Serial No.: to be determined	Group Art Unit:
Filed: 11/10/2003	Group Art Unit: 2621 Examiner:
Title: Fast High-Accuracy Multi-	Mariam, Daniel G.
Dimensional Pattern Inspection	
Attorney Docket No.: C97-050_CON5	
Commissioner for Patents	

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

## INFORMATION DISCLOSURE STATEMENT

Dear Sir:

This Information Disclosure Statement is submitted:

under 37 CFR 1.97(b), or

	(Within three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)
_	under 37 CFR 1.97(c) together with either a:  Statement under 37 CFR 1.97(e), or  a \$180.00 fee under 37 CFR 1.17(p), or  (After the CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
	under 37 CFR 1.97(d) together with a:  Statement under 37 CFR 1.97(e), and a \$180.00 fee set forth in 37 CFR 1.17(p).  (Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee)

X Applicant(s) submit herewith Form PTO 1449-Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

The relevance of the attached references is that this is the closest art of which Applicant is aware.

Applicant submits that the above references taken alone or in combination neither anticipate nor render obvious the present invention. Consideration of the foregoing in relation to this application is respectfully requested.

It is requested that the information disclosed herein be made of record in this application.

- Respectfully submitted,

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or the correspondence is being facsimile transmitted to the USPTO, on the date indicated below.

Date of Deposit: 11/10/03

Typed Name: Cheryl Sloane

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Arthur J. O'Dea

Attorney/Agent for Applicant(s)

Reg. No. 42,952

**Customer Number 23459** 

Date: November 7, 2003

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Substitute	for form 1449A/PTC	)		Complete if Known		
				Application Number	Not Known	
INFO	RMATION D	)ISC	LOSURE	Filing Date	11/10/2003	
STATEMENT BY APPLICANT			PLICANT	First Named Inventor	Silver et al.	
		Group Art Unit	2621			
(use as many sheets as necessary)			cessary)	Examiner Name	D. Mariam	
Sheet	1	of	3	Attorney Docket Number	C97-050 CON5	

		U.S. Patent D	Ocument	I	Date of Publication of	Pages, Columns, Lines,
Examiner Initials*	Cite No.1	Number	Kind Code <sup>2</sup> ( <i>if known</i> )	Name of Patentee or Applicant of Cited Document	Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appear
		3,069,654		Hough et al.	12-18-1962	
		3,986,007		Ruoff, Jr.	10-12-1976	
		4,146,924		Birk et al.	03-27-1979	
		4,581,762		Lapidus et al.	04-08-1986	<u> </u>
		4,618,989		Tsukune et al.	10-21-1986	<u> </u>
		4,707,647		Coldren et al.	11-17-1987	•••
		4,972,359		Silver et al.	11-20-1990	
		5,245,674		Cass et al.	09-14-1993	
		5,343,390		Doi et al.	08-30-1994	
		5,351,310		Califano et al.	09-27-1994	
		5,515,453	<u> </u>	Hennessey et al.	05-07-1996	
		5,694,482	Ī	Maali et al.	12-02-1997	
_		5,703,960		Soest	12-30-1997	
		5,828,769		Burns	10-27-1998	
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FOREIGN PATENT DOCUMENTS										
Examiner Initials*	Cite No.1	Office <sup>3</sup>	Foreign Patent Docu Number <sup>4</sup>	Ment Kind Code <sup>5</sup> ( <i>if known</i> )	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Τ <sup>6</sup>		
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁴Applicant is to place a check mark here if English language Translation is attached.

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Substitu	te for form 1449B/PT	<u>-</u> 0		Complete if Known		
				Application Number	Not Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT			CLOSURE	Filing Date	11/10/2003	
			PPLICANT	First Named Inventor	Silver, et al.	
		Group Art Unit	2621			
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Sheet	2	of	3	Attorney Docket Number	C97-050 CON5	

OTHER PRIOF	R ART -	NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		COGNEX CORPORATION, "Description Sobel Search," Natick, MA USA, 1998 but public before the above-referenced filing date.	
		COGNEX CORPORATION, "Chapter 7 CONLPAS," Cognex 3000/4000/5000 Programmable Vision Engines, Vision Tools, 1996, pp. 307-340, Revision 7.4 590-0136, Natick, MA USA	
		HU, YU HEN, "CORDIC-Based VLSI Architectures for Digital Signal Processing," IEE Signal Processing Magazine, July 1992, pp. 16-35, 1053-5888/92, USA	
		HU, et al, "Expanding the Range of Convergence of the CORDIC Algorithm," IEEE Transactions on computers, January 1991, pp. 13-21, Vol. 40, No. 1, USA	
		Ballard, D.H., "Generalizing the Hough Transform to Detect Arbitrary Shapes," Pattern Recognition, 1981, pp. 111-122, Vol. 13, No. 2, Pergaman Press Ltd., UK	
		LIN, et al., "On-Line CORDIC Algorithms," IEEE Transactions on Computers, pp. 1038-1052, Vol. 39, No. 8, USA	
		WALLACK, AARON SAMUEL, "Chapter 4 Robust Algorithms for Object Localization," Algorithms and Techniques for Manugacturing, 1995, pp. 97-148 (and Bibliography pp. 324-335) PhD thesis, Unversity of California at Berkeley, USA	
		JAMES D. FOLEY, ANDRIES VAN DAM, STEVEN K. FEINER, JOHN F. HUGHES, Second Edition in C, Introduction to Computer Graphics, pp. 36-49, Addison-Wesley Publishing Company, 1994, USA	
		LISA GOTTESFELD BROWN, A Survey of Image Registration Techniques, Department of Computer Science, Columbia University, New York, NY 10027, ACM Computing Surveys, Vol. 24, No. 4, December 1992	
		GUNILLA BORGEFORS, <u>Hierarchical Chamfer Matching</u> : A Parametric Edge Matching Algorithm, IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 10, No. 6, November 1988	

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Examiner		Date	
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Sheet	3	of	3	Attorney Docket Number	C97-050_CON5	

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